

**Evaluation Study For ZENHOM Area As A New Settlement  
From Environmental Disaster And Crisis Construction  
Projects (From 2006 To 2008 )**

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## SUMMARY

Introduction: To achieve the complete community development in Zeinhum squatter area full of sum houses have been effected major by natural disasters i.e. earthquakes which cause huge losses of destruction of building . Many essential steps have been taken by governmental organization, non governmental has contributed financially in this disaster each partner of the above mentioned has shared to provide aids, shelter and food to all vulnerable, till such time to provide permanent house for everyone who lost his/her house As a result of transferring the vulnerable from their houses in slum areas to the same area after it become an urban area. Due to the above mentioned reasons , economical and social problems have aroused and badly affected the development in these areas . Precautions must be considered to elevate harm result new way of planning which protects inhabitants and buildings prior such disaster and before construction pre disaster accrues and affects rehabilitation. Research Problem: 1. The repetition of all possible disaster for many urban areas which is subject to development area. All of which resulted the absence of integrated system for dealing with the disaster (prior – predate"-and during it) which resulted in many problems. 2. Egypt has been in the earthquake belt, as the earthquake is the most natural environmental disaster. Egypt may face such bad Earthquake at any given time. 3. The lack of proper professional designs for the settlements housing which result of unpredictable consequences if a disaster accrued again. 4. The government is bearing the fund for temporary and permanent housing for all vulnerable . 5. The vulnerable have faced social, economical and psychological problems in temporary and permanent houses. 6. The minimal of research studies in natural disaster which affected the architectural design. because the majority of such studies focus on 4 theoretical studies not the practical ones which neglect the proper ways of facing such risk management prior , during and after any natural disaster Research Objectives: This research study focuses on achieving to reach the following goals (objectives): 1. To study the effect of natural disaster ( i.e earthquake ) on urban development areas in Egypt . 2. Evaluation of implementing the main risk assessment and risk management plans of earthquake at Zeinhum in Egypt. 3. To choose various ways of procedures to minimize the destruction from natural disaster which can improve the standard of

development due to improvement of construction codes which can include the proper lands, area and activities could be subject to such natural disaster areas. 4. To study some of application of earth-quake code implement to protect buildings from natural disaster by improving the means and ways of construction 5. implementing of the most recent data base and technology of earthquake coding system and force it in such areas to be our code for construction .

Research Methodology: The research is based on group of theoretical and practical (methods): ♣ The first method : The theoretical scope : • Accurate information, data and statistics concerning generally of natural disaster and especially earthquake, by the above mentioned data . By have an idea concerning the size of natural disaster its average accuracy and destructions effects as well as reasons for accuracy , reasons for huge losses resulted from such disasters . It is illustrate on various methods of protection from its danger and the effectiveness of protection methods to avoid such danger and the possibility of prediction of natural disaster , and finally the measurements effective and accurate to ease the earthquake effect and environmental evaluated result of earthquakes . • Reading several M.A and PHD studies , related conferences and researches , recommendations. ♣ The second method : The practical scope : This scope depends upon practical study of area of (case study) by: 5 • Area field space computing. • Collection and preparing of buildings designs with vertical and horizontal designs. • Space area measurement of such areas. • Photographs and diagrams. • Preparing a questionnaire from for random portion of the area before and after the improvement and development of the area. • These questionnaires are included of social, environmental, architectural, and nonstructural studies. Research Contains: Chapters One: Natural disaster in poor settlement areas. This consists of the following sections : 1. ( Theories , subjects titles , information – theoretical frame ): includes : • The explanations of natural disaster kinds, classifications, characteristics, and definitions. • The temporally and camping for vulnerable housing accommodation . • Accommodate of old suburbs, slum areas . • The national societies (Non Government Organization) and its role for disaster preparedness. • Reconstruction and renovation, repairing, maintenance, re forcing and supporting building . 2. (General historical background of natural Disaster and earth-quake in particular ) and its effective on Environment . Chapters Two : Prevention from earthquake

and its management and methods of its evaluation and previous studies : This consists of the following sections: 3. (Management of Earthquake Disasters, its crisis, its prediction and methods of protection from earthquake crisis) the stages of this study's includes crisis management, phases to its requirements and its elements . the chapter also had mentioned the elements of the management preparedness and prediction , earth-quake crisis and plan as well as the studies of the disaster areas which includes 6 principle and based prior the construction of buildings and the needed infrastructural and geological studies , urban planning of cities , architectural design to control earth-quakes by implementing the earth-quake code . 4. ( International , regional and local patterns and social research ) which illustrate some projects to focus on Re-constructions , projects and for the disasters area affected by earthquake and earthquake area , as well as social evaluations for vulnerable .this chapter is mentioning some things : • International projects in Nepal and Ecuador . • Regional projects in Algeria and Yemen . • Local projects at Nahda suburb and Ein Al Sera . The chapter also focused on social researches , which have been set for crisis of vulnerable. 5. ( Engineering Treatment for building in earthquake methods of evaluation of disaster areas , and the programmed of crisis preparedness ) which begin by the behavior of buildings during earth-quakes and to reduce destruction effects in existing buildings in that area , on top of that the estimation of bad effects accrued after earth-quake . This will include the contingent evaluation for the prejudice of earthquake and contingency plane for temporary protection and to design the repair and the reinforce tasks , then estimating the damages and finally to illustrate on earthquakes stages and to reach the programme of crisis preparedness . Chapters Three : Analysis of case study ( Zeinhum ) : This is consist of the following sections: 6. ( Main Characteristics , problems analyzing it ) : this chapter based on the reasons to choose Zeinhum area , its general description , the definitions and the main characteristics of the area and its all phases . the chapter is also includes steps and lessons learnt from 1992 earth-quake at Zeinhum area and the data analysis by responsible officials Cairo governorates during the three phases of the Renovation of Zeinhum based on the each phase characteristics and problems then to illustrates on several design 7 options for Zeinhum reconstruction at phase three , as will as phase one and two . 7 . Data base for engineering problems for

phase three at Zeinhum to face earthquakes as well as solution for to face and evaluate by viewing types of buildings to rectify and renovate each buildings separately to study it as mentioned before . 8 . ( Survey study & its results ) : this chapter includes group of people at Zeinhum were whom subjected to questionnaires . it includes reasons to choose such group , and the results of these questionnaires done by researcher . as well as description of these group samples and its characteristics . finally the objectives has bead concluded by the results of all questionnaires and analyzing it . Chapters Four: Results and Recommendations : 9. (Results and Recommendations of analysis of research) its conclusions to reach the evaluating and applying the proposed program for rescue after earthquake, the research also results by resources for disaster mitigation and relief operation and recommendations at Zeinhum area . Case study area : The Zeinhum area has been chosen : As a case study for its rare experience accured there in Cairo Governorates . Reasons for choose this area : 1. It has an NGO there . 2. Considered as a kind of temporarily housing Permanente . 3. These areas have historical monuments . 4. It includes several services to be chosen as a living area . 5. Unique method for upgrading and renovating at cairo government . Methods of research : I have used various methods as follow : ♣ Discovering study . ♣ Documentations : records from projects data and decisions for development of slum areas . 8 Resoluti ons Facing Crisis Expectat ion N.G.O s Governmenta l Org. Crisis Disast er Existing situatio n In society Protecti on Befor e During After Research Suggestion: The research has suggested to reach the urban development which could let the society to face the situation of earthquake, it must limit and decrease the role of government and its organizations in the development , but on the contrary to increase the role of the Nongovernmental societies and other (Organizations, Beneficiaries, and individuals) in development and improvement of society's services in any destructed areas and to join effectively in designing , supervisory , constructive and decision taking . Figure show Proposed Research Assessments : These assessments are divided into: 1. Place assessment: the research has chosen Zeinhum area for such project (or disaster area). 2. To benefit from international development especially third world in development methodology and the Egyptian experience with the existing circumstances and local situation for urban development in Egypt. 3. Lack of data either construction

methods or settlement methods in temporarily or permanent settlement area as well as the data of slums areas situation. The result is the researcher must go himself to field visits to know any data required. Tools for research scope: 1. Renaissance study . 9 2. Records and project dragnets from projects records , data , and decision taken in such projects in the slum areas development . 3. Interviewing experts , specialists and directors of this development project . 4. Questionnaire for population in several stages. Results and conclusion : 1. disaster preparedness and disaster management from researcher points of view . 2. Analyzing of data base reached by the research through the case study of Zeinhum area by officials whom are responsible for the reconstructions . 3. set a data base for the buildings in the set area from 2006 – 2008 . 4. options for reconstruction of the area at Zeinhum which are not renovated yet . which it's phase three as it has three options at Zeinhum: ♣ Option one : Gradual dismantling : at the existing parts of transferring the populations to be transferred to permanent housing sits which will be outside their housing area . ♣ Option two : Repairing and Renovation : By taking a part of the superb which has a moderate or average situation to preserve the existing buildings . ♣ Option three : Demolishing : This option is being used at the poor status building area which is unreparable i.e. kiosks , slums , shutters housing . The researcher recommend to plan for a recycling plant area which will benefit the area and its environmental atmosphere , this plant could be built at the southern part of the set area because it is full of garbage accumulated . The researcher also recommend to preserve the air from the dust and the garbage . These recommendations are based on : ♣ Environmental dimension for building and development by the proper choosing of building materials , the painting of the houses . 10 ♣ The area must be a wide spread by having each building is separated from the other to allow air flow and the natural lighting during daytime and privacy for the people . ♣ To increase various services and to make it separated from the buildings to avoid pollution . ♣ To use Islamic charisma in buildings which will be suitable in this area which has various Islamic monuments , suitable for the proper environmental reasons and designs . i.e vast windows (MASHRABIA) playgrounds , glass ceilings and MALKAF . ♣ Full cooperation is needed between Non Governmental Organizations (N. G. O), Individuals, private sector and the government. ♣ A full social study must be implemented prior the re

building of such area . ♣ The above mentioned recommendations have much more advantages and less disadvantages. - Development of elevation of one of the temporary buildings at the set area by using the Islamic style which has a very successful environmental for successful lighting, airflow by using vast windows and glass ceiling and an open playground . - Development of plan for one of existing buildings by proper direction of the service space i.e kitchen and toilet to be reallocated at the southern area and bedrooms and living to be at the northern area . it must have a big space between each building and to build balconies for each flat . - It also must have a landscape ( green area ) around each building to increase the circulation of air .

Recommendations : General Recommendation : • Test and analyzing all building which suffered from earthquakes as a basic step to maintain and support it or demolish it if it is necessary . • To implement the building rules at the reconstructed and renovated areas .

11 Recommendation from research point of view :

1. Recommendation for decision makers : - To issue the instruction to have maps for risks categories for all areas subject for such risks in Egypt . These various maps must illustrate the degrees of danger and the risky areas subject for earthquakes . - A proper usage of vacant lands and areas according to these maps to avoid any future danger which may be accord.
2. Recommendation for researcher : - To use my suggested programme to evaluate the projects of earthquakes preparedness and rebuilding of disaster area. - The suggested programme may be used for the urban design either a new areas or effected area.
- 3 . Recommendation for arch , civil , planner urban to use the earthquake's codes for buildings to protect these buildings . - To implement the earthquake's code study for Engineering students from the first academic year to the final year to encourage students and researchers to improve the standardization of earthquakes codes . - To have employment opportunities for people staying at the risk area whom will face the unemployment , also to have vocational training for people to share the social participation for anti earthquakes´ buildings .